

MD. HASANUL KABIR

hasanul.kabir09@gmail.com | Portfolio | LinkedIn | GitHub

PERSONAL DATA

Master's Student in Computer Science & Technology, Nanjing Normal University, China

Email: hasanul.kabir09@gmail.com

Nationality: Bangladeshi

RESEARCH INTERESTS

- Autonomous Systems, AI-based Automation, Intelligent Inspection Robots, Multi-point Navigation
- Deep Reinforcement Learning, Machine Learning, Computer Vision, Robotics Simulation

EDUCATION

M.Sc. in Computer Science & Technology <i>Nanjing Normal University</i>	2023 – 2026 (Expected) <i>Nanjing, China</i>
B.Sc. in Computer Science & Technology <i>Henan Polytechnic University</i>	2017 – 2021 <i>Jiaozuo, China — Grade: 85%</i>

RESEARCH EXPERIENCE

Video-Based Obstacle Avoidance using Deep Reinforcement Learning <i>Nanjing Normal University</i>	2023 – Present <i>Nanjing, China</i>
<ul style="list-style-type: none">• Ongoing research on developing an intelligent obstacle avoidance framework for autonomous mobile robots using vision-based perception and deep reinforcement learning (DRL).• Integrated YOLO-based object detection for dynamic obstacle recognition and implemented DRL algorithms (DQN/PPO) for real-time navigation and decision-making.• Designed a simulation environment in ROS and Gazebo to evaluate navigation behavior under varying lighting, noise, and dynamic obstacle conditions.• Targets robust visual navigation by tightly coupling perception and control within an end-to-end DRL training pipeline.	

Air Quality Prediction Model <i>Nanjing Normal University</i>	2023 <i>Nanjing, China</i>
<ul style="list-style-type: none">– This research addresses the challenge of air pollution forecasting by integrating multi-source environmental data through a deep learning framework.– Developed an Attention-Enhanced Spatio-Temporal Graph Convolutional Network (AE-STGCN) combining spatial-temporal attention with graph convolutional learning.– Unified air pollutant, meteorological, and POI datasets into a grid-based representation to improve prediction accuracy and interpretability.	

Consortium Research Center (CRC) <i>Dhaka, Bangladesh (Remote)</i>	Jul 2021 – Present
<ul style="list-style-type: none">– Head of People (Jan 2024 – Present) – Coordinate research teams, manage R&D planning, and ensure workflow alignment between departments.– Junior Research Assistant (Jul 2021 – Dec 2023) – Conducted literature reviews, data collection, and grant preparation for robotics and automation research.– Supported project documentation and QA verification for experimental research outputs.	

PROJECTS

Bayesian Regression for Noisy Sensor Data 2024

Personal Project (GitHub: github.com/hasanulkabir-md/bayesian-regression-sensors) Nanjing, China

- Implemented a **Bayesian Linear Regression** model in Python/PyMC to simulate and calibrate noisy sensor measurements.
- Compared Bayesian inference with ordinary least squares (OLS) to estimate sensor bias and quantify predictive uncertainty in real-world-style data.
- Visualized posterior distributions and credible intervals to demonstrate how Bayesian methods improve reliability of measurements for robotics/IoT applications.

Kalman Filter for Motion Tracking 2024

Personal Project (GitHub: github.com/hasanulkabir-md/kalman-filter-tracking) Nanjing, China

- Developed a **2D Kalman Filter** to track a moving target under noisy position measurements using a constant-velocity motion model.
- Implemented the full prediction–update loop (state transition, measurement model, and noise covariances) to estimate latent position and velocity.
- Analyzed and visualized noisy vs. filtered trajectories, showing significant reduction in tracking error relevant to localization and sensor-fusion in autonomous systems.

PUBLICATIONS

Multi-point Navigation Method for Intelligent Robots 2024

Journal of Computing Co-author

Credit Approval Decision using ML Algorithms 2022

IEEE ICRITO Conference Co-author

TECHNICAL SKILLS

Programming: Python (primary), MATLAB, Java, SQL, Bash, C/C++ (basic)

Testing & QA Tools: PyTest, Postman, Selenium, Playwright, JMeter, Locust, Jenkins

Automation & Dev Tools: Git, Docker, Linux (Ubuntu), VS Code, MySQL

Concepts: REST API Testing, Regression Testing, Performance & Load Testing, SDLC, Test Case Design, Bug Tracking (JIRA)

AI & Research: Reinforcement Learning (DQN/PPO), Kinematics, Path Planning (A*, RRT, D*), YOLO Object Detection, ROS, Figma, Gazebo Simulation

PARTICIPATION IN WORKSHOPS & TRAINING

CV and Career Writing Workshop 2023

Voluntary Participant Nanjing Normal University

Youth for Civic Leadership 2022

JAAGO Foundation, Bangladesh Training on civic engagement, leadership, and social responsibility

Joyful Reading Jiangsu 2024

Videography Category Participant Jiangsu, China

SOFT SKILLS & CERTIFICATION COURSES

Introduction to Programming <i>Coursera Online Course</i>	2020
Computer Vision Basics <i>Coursera Online Course</i>	2020
AWS Machine Learning Foundations <i>Amazon Web Services</i>	2021
Java Basics & Programming Fundamentals <i>Coursera / Independent Study</i>	2021
Cyber Security Testing <i>Arena Web Security, Bangladesh</i>	2021

AWARDS & ACHIEVEMENTS

Provincial Scholarship (2×) <i>China Education Ministry</i>	2019, 2020 <i>Henan Province</i>
#MyChinaStory Writing Competition – Best Participant <i>Embassy of the People’s Republic of China in Bangladesh</i>	2020
Youth for Civic Leadership Award <i>JAAGO Foundation, Bangladesh</i>	2022
Best Reader Award <i>SEQAEP, Bangladesh Education Ministry</i>	2012

COMMUNITY INVOLVEMENT

Local Youth Leader <i>JAAGO Foundation</i>	2022 <i>Organized community events and promoted youth engagement in civic education.</i>
Volunteer, Yuntai Maker Space <i>Henan Polytechnic University</i>	2018 – 2021 <i>Supported student innovation projects and public events.</i>

EXTRACURRICULAR ACTIVITIES

- Photography & Visual Storytelling** — Participated in local and university-level contests; captured cultural and creative moments for social and academic campaigns.
- Videography & Editing** — Produced short storytelling videos, including submissions for “Joyful Journey to Literary Jiangsu 2024.”
- Design & Branding** — Created digital posters, packaging labels, and branding visuals for community projects and small businesses.
- Creative Writing & Blogging** — Awarded in the “#MyChinaStory” writing competition by the Chinese Embassy; publish reflective and educational blogs on Medium.
- Youth Leadership & Volunteering** — Trained under JAAGO Foundation’s “Youth for Civic” program and participated in local community initiatives.
- Portfolio Links:** Explore my creative work on Behance, YouTube, , and Medium.

LANGUAGES

English (Professional) — Chinese (Elementary) — Bengali (Native)